Mazzocchi et al. commented on the lack of objective breast measurement systems, stating that “none has been adopted in clinical practice because they are either very complex or expensive. Therefore, the evaluation of breast surgery outcomes remains subjective.” Evidently, the authors are unaware of a 2-dimensional system (Figure 1) that can be used in multiple clinical applications.

One-dimensional systems have been available for years, but they have a number of limitations. Differences are expected between individuals and between repeated (test-retest) measurements. There is subjectivity in labeling of the landmarks. Another problem with such linear measurements is relevance. The distance from the suprasternal notch to the nipple is affected by the length of the torso; it is not related to breast aesthetics. The nipple level does not change appreciably after a breast augmentation, which limits its usefulness as a marker. Breast projection, upper pole projection, and breast area are known to increase after augmentation (Figure 1), but none of the authors’ measurements directly assessed these parameters. The inframammary crease drops after breast augmentation (Figure 1), making it an unreliable landmark. Three-dimensional measurement systems are becoming more popular, but they have some drawbacks, including expense, complexity, variability in border labeling, and the troublesome issue of defining the breast/chest wall interface.

Two-dimensional measurements can be used to determine breast area (Figure 1), which in turn can be used to evaluate size changes. Area is not the same as volume, but it varies proportionately with volume in a squared relationship. Defining the breast/chest wall border is unnecessary because the posterior breast margin (the vertical line that drops down from the sternal notch) serves as the reference plane. Photographs can be taken in 1 minute so there is no additional time commitment for the patient, which improves compliance. Using a tape measure is time consuming and tedious.

The authors’ data merit comment. The midarmpit-to-nipple distance is expected to be imprecise because no anatomical feature defines the midarmpit. However, data in Table 1 in the article by Mazzocchi et al. indicate that at the 1-year follow-up, the mean difference between breasts was 0.043 cm, or <1 mm. The standard deviation was 0.05 cm. These tiny values indicate that almost all measured differences were within 1 mm of 0.43 mm (95% of the measurements lie within 2 standard deviations of the mean in a normally distributed sample). This level of precision is extraordinary. With this level of precision, a 2-mm difference in mean values between treatment groups (0.43 mm for group A versus 2.46 mm for group B), which is a discrepancy that seems negligible, becomes highly significant ($P < .0001$).

The midclavicle-to-nipple values were also remarkably consistent. For subjects in group A, the mean difference between breasts at 1 year was 0.063 cm (<1 mm). The standard deviation was 0.07 cm (also <1 mm). It is highly questionable whether the position of the midclavicle can be labeled consistently with a precision <1 mm. The authors correctly noted the importance of using a more rigorous $\alpha$ level for multiple comparisons but then used a value of 0.05, inviting the type I (false-positive) error that they intended to avoid.

Mazzocchi et al did not describe their randomization process. They reported that consecutive patients were studied. Typically, patients who do not wish to be randomized are excluded. It is unlikely that all patients will submit to randomization when undergoing an elective cosmetic surgical procedure that has permanent consequences. Multiple confounders are at work here. It is not clear whether both surgeons performed both operations, so the surgeon might be a variable. Tables 1 and 2 in their article show that the measurement differences between sides were dissimilar before
This 20-year-old woman with minor asymmetry is seen before (A,C,E) and 2 years after (B,D,F) a breast augmentation using submuscular smooth, round moderate profile saline-filled implants (Allergan Inc., Irvine, CA). Preoperatively, the right breast was slightly larger than the left. The right breast implant was inflated to 380 cc and the left implant was inflated to 410 cc. Frontal views (A,B) show an increase in areola diameter and lowering of the inframammary folds. Right lateral photographs (C,D) show increased upper pole projection, breast projection, and breast area after surgery. The nipple level is unchanged. Left lateral photographs (E,F) also show increased upper pole projection, breast projection, and area. MPost, maximum postoperative breast projection.
surgery. This difference is expected because the 2 treatment
groups contained different patients who presumably had dif-
erent degrees of asymmetry. The shape of the Spectra adjust-
able implant (Mentor Worldwide LLC, Santa Barbara, CA) is
not the same as that of a round silicone gel implant.\textsuperscript{7,8} In the
legend Figure 3 of their article,\textsuperscript{1} Mazzocchi et al list the pro-
jection of a Spectra 335-cc implant as 4.9 cm, which is equal
to the contralateral 350-cc High-Profile silicone gel implant
(Mentor Worldwide LLC), but adding 40 cc of saline pushes
the projection close to 5.7 cm.\textsuperscript{7} After adding 35 cc of saline,
the Spectra implant used in Figure 5 of their article would
have a projection close to 5.3 cm, not 4.5 cm. In the legend
of that figure, the authors reported the dimensions of a
Moderate Plus profile implant (Mentor Worldwide LLC)\textsuperscript{6} but
call it High-Profile. They did not compare the mean implant
volumes for the 2 groups. Importantly, the patient in
Figure 5 of the original article had a left mastopexy, although
this fact was not mentioned in their figure legend or
Methods section. A mastopexy affects breast shape.\textsuperscript{3} How
many women in each group had mastopexies?

Adjustable implants are not in widespread use.\textsuperscript{9}
The Spectra implant differs from the Spectrum implant
(Mentor Worldwide LLC) in that adjustments can only
be made intraoperatively and the saline fill range is
10-50 cc for typical implant sizes,\textsuperscript{2} similar to the fill range
for saline implants. Sizers can assist with size selection.
Teitelbaum\textsuperscript{9} commented that intraoperative adjustability
is not an advantage if implants with slightly different
sizes and shapes are used. The Spectra implant is also
much more expensive than a nonadjustable implant.\textsuperscript{9}
Augmentation-mastopexy is most effective for cases of
moderate asymmetry,\textsuperscript{3} in which the resection weights are
varied as needed to gain symmetry.\textsuperscript{3} In summary, an
inadequate measurement system, unreliable data, and
confounders undermine the authors’ claim that their mea-
surement method is validated and that a unilateral adjust-
able implant truly provides better symmetry than 2
implants of different volumes.

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